IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Haase, Richard A.	§	Examiner: Chester T. Barry
	§	
	§	Group Art Unit: 1724
Serial No.: 09/866,145	§	
Filed: 05/25/2001	§	Patent Owners Docket: 002 CIP RI
	§	
Re-Issue of U.S. Pat. No. 5,906,750	§	
Filed: 04/06/98	§	
	§	
Title: Method of Dewatering Sludge	§	

Attn. Examiner Chester T. Barry
C/O The Assistant Commissioner for Patents
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO OFFICE ACTION OF SEPTEMBER 25, 2003

The Assistant Commissioner and Examiner Barry:

This is a Response to the Office Action of September 25, 2003.

CORRESPONDENCE ADDRESS:
Richard A. Haase
4402 Ringrose Drive
Missouri City, Texas 77459
(T) 281.261.9543
(F) 281.261.6505
richard.haase@clearvalue.com

 Express Mail Label No. ER 440364089 US

AMMENDMENTS

Please AMEND the claims as follows:

(MARKED-UP VERSION)

1. (Amended) A method for dewatering thermophilic biological sludge[that has been digested by a thermophilic digestion process], comprising:

   a. adding [polymeric quaternary ammonium compounds, aluminum sulfate, ferric chloride and blends thereof as]a primary component[,] to the thermophilic biological sludge; said primary component comprising at least one of aluminum sulfate and ferric chloride; wherein said primary component may also comprise a polyquaternary ammonium compound; and

   b. adding a cationic or anionic polyacrylamide to the thermophilic biological sludge[; such that any combinations of the primary component and of the polyacrylamides enhance dewatering of the sludge].

2. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s are from] is of the di-allyl di-methyl ammonium chloride (DADMAC) [family]variety.

3. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymeric quaternary ammonium compound[s are from] is of the epichlorohydrin di-methyl amine (epi-DMA) [family]variety.

4. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof are]said primary component is added directly to [the]said thermophilic biological sludge and, upon formation of microflocs of the sludge from [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof]said primary component, said cationic polyacrylamide is added[to form a floc that dewaters the sludge].

5. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polymeric quaternary ammonium compound[s] with respect to aluminum sulfate range from about 1:1[6] to about 1:20, by weight.

6. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polymeric quaternary ammonium compound[s] with respect to ferric chloride range from about 1:[8]1 to about 1:[1]20, by weight.

7. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polyacrylamide with respect to aluminum sulfate range from about 1:80 to about 1:8, by weight.

8. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the ratio[s] of the polyacrylamide with respect to ferric chloride range from about 1:70 to about 1:7, by weight.

9. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of [the]said thermophilic biological sludge is between about 50 ppm:1 percent and about [3]5000 ppm:1 percent.

10. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compound, aluminum sulfate, ferric chloride and blends thereof, are]said primary component is added directly to [the]said thermophilic biological sludge in an amount sufficient to cause formation of a cationic overcharge within a developed micro floc system, [and an]then said anionic polyacrylamide is added[for final floc formation].

11. (Amended) The method for dewatering thermophilic biological sludge according to claim 10, wherein [the polymeric quaternary ammonium compound]said primary component and [the]said anionic polyacrylamide are in an approximately 1:8 to 20:1

ratio, by weight[with the anionic polyacrylamide having a higher molecular weight than the polymeric quaternary ammonium compound does].

12. (Amended) The method for dewatering thermophilic biological sludge according to claim 10, wherein the polymer concentration to solids ratio of total polymer dosage requirement in relationship to percentage of solids component of [the]said thermophilic biological sludge is between approximately 50 ppm:1 percent and approximately 5000 ppm:1 percent.

13. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the]said thermophilic biological sludge is mixed with primary sludge.

14. **Claim 14 has been deleted.**

15. (Amended) The method for dewatering thermophilic biological sludge according to claim 1, wherein [the polymeric quaternary ammonium compounds, aluminum sulfate, ferric chloride and blends thereof, as well as the]said primary component and said polyacrylamide is used in solution, in emulsion or in dry form.

16. (New) A sludge composition, comprising:
water;
solids comprising thermophiles;
aluminum sulfate; and
polyacrylamide.

17. (New) A sludge composition, comprising:
water;
solids comprising thermophiles;
ferric chloride; and
polyacrylamide.

18. (New) A sludge composition, comprising:
water;
solids comprising thermophiles;
aluminum sulfate and ferric chloride; and
polyacrylamide.

19. (New) The sludge of claims 16, 17, or 18, including:
a polyquaternary ammonium compound.

20. (New) The sludge of claim 19, wherein the polyquaternary ammonium compound is of the DADMAC variety and/or the Epi-DMA variety.

21. (NEW) The sludge of claims 16, 17 or 18, wherein said polyacrylamide is cationic or anionic.